

ABSTRACT

A family of switching amplifiers with reduced component count and lower current stresses on switches. The amplifiers have a power modulator comprising ground-referenced switches driving a tapped transformer which reduces current stresses on switches. A synchronous demodulator transforms modulated voltages back to audio signal. In one embodiment, the synchronous demodulator comprises switches in a H-bridge configuration selectively connecting the transformer to ground reference through a loudspeaker, driving it with bipolar voltages. Different embodiments using MOSFETs to implement the functions of a synchronous demodulator using bi-directional switches reduce total component count and increase the efficiency of the amplifiers. Timing control of the power modulator and the synchronous demodulator enables zero current switching of the power modulator.